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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,768	01/22/2002	Milind V. Kantak	6145C	5551
29394	7590	05/05/2004	EXAMINER	
BWX TECHNOLOGIES, INC. 1562 BEESON STREET ALLIANCE, OH 44601			CREPEAU, JONATHAN	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/053,768

Applicant(s)

KANTAK ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 4-315770.

Regarding claim 1, in the abstract and Figures 1 and 2, the reference teaches a fuel cell comprising an anode (16), a fuel flow containment plate (13), an anode chamber defining a fuel flow path (14a, b), and a staging plate (10) located in the anode chamber to divide the flow of fuel therethrough to two different staging areas of the anode. The staging plate is essentially flat and extends parallel to the anode. Regarding claims 1, 2, and 3, the plate is provided with oval-shaped apertures over a section thereof, and, due to its position in the fuel cell, must be capable of conducting electricity.

Thus, the instant claims are anticipated.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 4-315770.

The reference is applied to claims 1-3 for the reasons stated above. However, the reference does not expressly teach that the plate is constructed from a high temperature metal, as recited in claim 4.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use a high-temperature metal in the staging plate of JP '770. The fuel cell of JP '770 is of the molten carbonate type, which typically operates at temperatures exceeding 600 degrees C. As such, the artisan would be motivated to use a high-temperature metal for constructing the staging plate of JP '770.

5. Claims 1, 4, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-288133.

Regarding claim 1, in the abstract and Figures 1-3, the reference teaches a fuel cell comprising an anode (20), a fuel containment plate (60), an anode chamber defining a fuel flow path (40), and a staging plate (42) located in the anode chamber to divide the flow of fuel therethrough to two different staging areas of the anode. Regarding claims 1 and 6, as shown in

Figure 5, first and second staging plates (101, 102) may be used to divide the flow of fuel across three different sections of the anode. The staging plates are essentially flat. As set forth in paragraph 16 of the machine translation, the staging plates may be made of a corrosion resistant material such as resin, carbon, or ceramic.

The reference does not expressly teach that the staging plates are capable of conducting electricity generated by the fuel cell, as recited in claim 1, or that they are constructed from a high temperature metal, as recited in claims 4 and 10.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the reference's disclosure of carbon and ceramic reasonably indicates that the staging plates are electrically conductive. Further, the reference's disclosure of a corrosion-resistant material in the staging plate would motivate the artisan to use a metal such as stainless steel, which can be considered to be a "high-temperature metal." As such, these limitations would be rendered obvious to the skilled artisan.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-288133 as applied to claims 1, 4, 6, and 10 above, and further in view of JP 4-315770.

JP 7-288133 does not expressly teach that at least one of the staging plates has apertures over a section thereof.

As set forth above, JP 4-315770 teaches a staging plate provided with oval-shaped apertures over a section thereof.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the apertures of JP 4-315770 in the staging plate(s) of JP 7-288133. In the abstract, JP 4-315770 teaches that gas concentration and current density on the anode surface are made uniform by the use of the apertures. Accordingly, the artisan would be motivated to use these apertures in the staging plate(s) of JP 7-288133, in hopes of better controlling and further optimizing the gas concentration distribution over the electrode surface.

### *Double Patenting*

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-19 of U.S. Patent No. 6,376,117. Although the conflicting claims are not identical, they are not patentably distinct from each other because the features of the instant claims not recited in the '117 patent claims would be obvious to the skilled

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artisan. For example, the instant claims recite a fuel flow containment plate. However, the inclusion of such into the fuel cell defined by the '117 patent claims would be obvious in order to define the "anode chamber" recited in the '117 patent claims. Further, the use of a "high temperature metal" such as stainless steel to form the staging plates of the '117 patent claims would also be obvious to the skilled artisan. As such, the instant claims define an obvious variation of the '117 patent claims.

*Allowable Subject Matter*

9. Claims 5 and 9 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if the above-noted obviousness-type double patenting rejection was overcome.

10. The following is a statement of reasons for the indication of allowable subject matter:

Claims 5 and 9 recite, among other features, that staging plate(s) include at least one filled via for conducting electricity. Neither JP 7-288133 nor JP 4-315770 teaches or fairly suggests this feature. As such, claims 5 and 9 contain allowable subject matter.

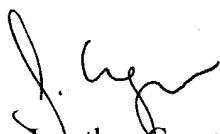
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*Conclusion*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (571) 272-1302. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jonathan Crepeau  
Patent Examiner  
Art Unit 1746  
April 29, 2004